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INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference OPP030281KR	FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/KR 2003/000917	International filing date (day/month/year) 9 May 2003 (09.05.2003)	Priority Date (day/month/year) 1 August 2002 (01.08.2002)
International Patent Classification (IPC) or national classification and IPC IPC ⁷ : C07C 63/38, C07C 51/43		
Applicant SK CHEMICALS CO., LTD		

1. This international preliminary examination report has been prepared by this International Preliminary Examination Authority and is transmitted to the applicant according to Article 36.

2. This REPORT consists of a total of 3 sheets, including this cover sheet.

☐ This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of _____ sheets.

3. This report contains indications relating to the following items:

- I. ☒ Basis of the opinion
- II. ☐ Priority
- III. ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV. ☐ Lack of unity of invention
- V. ☒ Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI. ☐ Certain documents cited
- VII. ☐ Certain defects in the international application
- VIII. ☐ Certain observations on the international application

Date of submission of the demand 27.02.2004	Date of completion of this report 12 January 2005 (12.01.2005)
Name and mailing address of the IPEA/AT Austrian Patent Office Dresdner Straße 87 A-1200 Vienna Facsimile No. 1/53424/200	Authorized officer MÜLLER-HIEL R. Telephone No. 1/53424/225

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.
PCT/KR 2003/000917

I. Basis of the report

1. With regard to the elements of the international application:*

☒ the international application as originally filed

☐ the description:

pages _____, as originally filed

pages _____, filed with the demand

pages _____, filed with the letter of _____.

☐ the claims:

pages _____, as originally filed

pages _____, as amended (together with any statement) under Article 19

pages _____, filed with the demand

pages _____, filed with the letter of _____.

☐ the drawings:

pages _____, as originally filed

pages _____, filed with the demand

pages _____, filed with the letter of _____.

☐ the sequence listing part of the description:

pages _____, as originally filed

pages _____, filed with the demand

pages _____, filed with the letter of _____.

2. With regard to the language, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language _____ which is:

☐ the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).

☐ the language of publication of the international application (under Rule 48.3(b)).

☐ the language of the translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

☐ contained in the international application in printed form.

☐ filed together with the international application in computer readable form.

☐ furnished subsequently to this Authority in written form.

☐ furnished subsequently to this Authority in computer readable form.

☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.

☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. ☐ The amendments have resulted in the cancellation of:

☐ the description, pages _____.

☐ the claims, Nos. _____.

☐ the drawings, sheets/fig _____.

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).**

* Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as „originally filed“ and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17).

** Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.
PCT/KR 2003/000917

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement			
Novelty (N)	Claims	1, 5, 6	YES
	Claims	2-4, 7	NO
Inventive step (IS)	Claims	1, 5, 6	YES
	Claims	2-4, 7	NO
Industrial applicability (IA)	Claims	1-7	YES
	Claims	----	NO

Citations and explanations (Rule 70.7)

The following documents have been cited in the Search Report:

D1: US 6291707 B1

D2: US 5344969 A1

D3: WO 1998/012157 A2

D4: EP 1055660 A1

D5: JP 07 118200 A

D6: Jiao, N. et al. Advances in synthesis and purification technology of 2,6-naphthalenedicarboxylic acid. Shihua Jishu Yu Yingyong 2002, 20(6), 410-416 (Ch). Columbus, OH, USA: Chemical abstracts, Vol. 138, No. 18, 05.05.2003, page 1010, column 2-page 1011, column 1, the abstract No. 273227u

None of the documents cited in the search report describes a process for refining 2,6-naphthalene dicarboxylic acid by recrystallizing the acid using a mixed solvent, which comprises as co-solvent an acetate. Therefore, claims 1,5 and 6 meet the criteria of novelty and inventive step.

However, document D1 describes a method for refining 2,6-naphthalene dicarboxylic acid, comprising formation of an amine salt and removal of impurities by crystallization in the presence of a solvent, e.g. water, alcohol or ester or mixtures thereof (see specially column 9, line 43; col. 10, lines 48-52; claims 6,18). Therefore, claims 2-4 and 7, which include amine formation as an additional purification step, cannot be considered to meet the criteria of novelty and inventive step.

Documents D2 – D5 were only cited to define the general state of the art but are not considered to be of particular relevance.

Document D6, which was just published 4 days before the international filing date, does not describe any concrete solvent. As the original document, which is the basis for this abstract, is written in Chinese, it could not be understood by the examiner. Therefore, this document can be brought to the attention of the applicant only as part of the general state of the art whatever its real value may be.

Industrial applicability is given.